

RAW SEQUENCE LISTING

The Biotechnology Systems Branch of the Scientific and Technical Information Center (STIC) no errors detected.

Application Serial Number: 10/028,051A
Source: IFW16
Date Processed by STIC: 1/4/05

ENTERED



IFW16

RAW SEQUENCE LISTING
PATENT APPLICATION: US/10/028,051A

DATE: 01/04/2005
TIME: 13:03:46

Input Set : A:\NIH133.1CPC1.TXT
Output Set: N:\CRF4\01042005\J028051A.raw

Q, 6

4 <110> APPLICANT: Luyten, Frank P.
5 Moos, Malcolm J.R.
6 Hoang, Bang
7 Wang, Shouwen
9 <120> TITLE OF INVENTION: ISOLATION AND USE OF TISSUE
10 GROWTH-INDUCING FRZB PROTEIN
12 <130> FILE REFERENCE: NIH133.1CPC1
14 <140> CURRENT APPLICATION NUMBER: US 10/028051A
15 <141> CURRENT FILING DATE: 2001-12-19
17 <150> PRIOR APPLICATION NUMBER: US 08/822333
18 <151> PRIOR FILING DATE: 1997-03-20
20 <150> PRIOR APPLICATION NUMBER: US 08/729,452
21 <151> PRIOR FILING DATE: 1996-10-11
23 <160> NUMBER OF SEQ ID NOS: 23
25 <170> SOFTWARE: FastSEQ for Windows Version 4.0
27 <210> SEQ ID NO: 1
28 <211> LENGTH: 2374
29 <212> TYPE: DNA
30 <213> ORGANISM: Bos taurus
32 <400> SEQUENCE: 1
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34 gcggccggcgg ctggcgctcg ggcgcgttt tgggacccca ttgagggaaat ttgatccaag 120
35 gaagctgtga gattgccggg ggaggagaag ctcccatatc attgtgtcca cttccagggc 180
36 ggggaggagg aaacggcgaa gcggccctct cggcggttctc cgcactgtg caccctgccc 240
37 catcctgccc agatcatggt ctgcgggagc cgaggcgaaa tgctgtgtc gccggccggg 300
38 ctactcgccc tggctgcgtc ctgcctgtc cgcgtgccc gagcgcggc ggcgcctgt 360
39 gagccgttgc gcattccctt gtcaagtcc ctgcccgtga acatgactaa gatgcccac 420
40 cacctgcacc acagcaccca ggcacacgc atcctggcca tcgagcagt cgaaggctcg 480
41 ctggccaccc actgcagccc ggatctgtc ttcttcctct gtgtatgtc cgcgcacccatc 540
42 tgcaccatttgc acttccagca cgagcccatc aagccctgca agtctgtgtc cgagcggggc 600
43 cggcagggtgt gtagccat cctcatcaag taccgcact cgtggccggaa aagcctggcc 660
44 tgcgaggagc tgccagtata tgaccgcggc gtgtcatct ctccggaggc catgtca 720
45 gcccacggag ccgattttcc tatggattcc agtaatggaa actgttagagg agcaaggcgt 780
46 gaacgtcgca aatgtaaacc agtcagagct acacagaaga cctatttccg aaacaattac 840
47 aactatgtca ttccggctaa agttaaagaa ataaagacca agtgcatga tgtgactgca 900
48 gtagtggagg tgaaggagat tttaaaggct tctctggtaa acatccaag ggaaactgtg 960
49 aacctttata ccagctctgg ctgcctgtgt cctccactta acgttaatga ggagtatctc 1020
50 atcatgggtc acgaagatga agagcgctcc agattactgt tggtagaagg ttctattgtc 1080
51 gagaatggaa aggtatcgact tggtaaaaaaa gttaaagggt gggatatgaa gctccgtcat 1140
52 cttggactga atacaagtga ttctagccat agtgcattca ctcagagtca gaaggctggc 1200
53 aggaattcta actcccgcca agcacgcaac taaatcctga aatgcagaaa atcctcagtg 1260
54 gacttcctat taagacttgc attgtggac tagcaaaggc aaattgcact attgcacgtc 1320
55 atagtcattt ttttagccac aaaaatcagg tggtaactga tattacttctt atttttctt 1380

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56 ttgtttctg ctttctcct tccccattc cttttttgtt ggtctgagta cagatcctta 1440
 57 aatatattat atgtattctt tttcaactaat catggaaaaa ctgttctttg caataataat 1500
 58 aaattaaaca tggataacc agggccttt tgctggagta aatgttaatt tgctgttctg 1560
 59 cacccagatt gggatgcaa tattggatgc aaagagagat ttctggata cagagaaagc 1620
 60 tagataggct gtaaagcata ctttgcgtat ctaattacag cctcattttt gcatgcctt 1680
 61 tggcattctc ctcacgctta gaaaggtaa aatgtttata aaggtaaaat gacagttga 1740
 62 aatcaaattgc caacaggcag agcaatcaag caccaggaag catttatgaa gaaatgacac 1800
 63 atgagatgaa ttatggcaa gattggcagg aagcaaaata aatagcatta ggagctgggg 1860
 64 atagagcatt ttgcctgact gagaagcaca actgaagcta gtagctgttgggtttaac 1920
 65 agcagcattt ttcttttgc gatacattt gttgtctgtt aatatattga tcagcattag 1980
 66 agcagtgat tttgaccaga catcaggatgat ttttgcata gctctgttta atttgcttcc 2040
 67 ttttagatga acccattggt gtctttttt tcttcttttta aaataaatct cccttgcgc 2100
 68 atttgaccag gaaaagaaaag catatatgca tttgcacccgg gctgttattt ttaagatatg 2160
 69 tagctctata aaacgctata gtcggaaatgt gttttttttt gcaagattct ggggtgtgt 2220
 70 attaatgtgt tttgttccgc atacactcac actcaagctg aagtgaacga caggcctgtg 2280
 71 cactggcctg cactttatca tttggattt gttgtttaa tgctcagtaa aatatgctta 2340
 72 ataaaaggaa aaaaaaaaaaaa aaaaaaaaaaaa aaaa 2374
 74 <210> SEQ ID NO: 2
 75 <211> LENGTH: 325
 76 <212> TYPE: PRT
 77 <213> ORGANISM: Bos taurus
 79 <400> SEQUENCE: 2
 80 Met Val Cys Gly Ser Arg Gly Gly Met Leu Leu Leu Pro Ala Gly Leu
 81 1 5 10 15
 82 Leu Ala Leu Ala Ala Leu Cys Leu Leu Arg Val Pro Gly Ala Arg Ala
 83 20 25 30
 84 Ala Ala Cys Glu Pro Val Arg Ile Pro Leu Cys Lys Ser Leu Pro Trp
 85 35 40 45
 86 Asn Met Thr Lys Met Pro Asn His Leu His His Ser Thr Gln Ala Asn
 87 50 55 60
 88 Ala Ile Leu Ala Ile Glu Gln Phe Glu Gly Leu Leu Gly Thr His Cys
 89 65 70 75 80
 90 Ser Pro Asp Leu Leu Phe Phe Leu Cys Ala Met Tyr Ala Pro Ile Cys
 91 85 90 95
 92 Thr Ile Asp Phe Gln His Glu Pro Ile Lys Pro Cys Lys Ser Val Cys
 93 100 105 110
 94 Glu Arg Ala Arg Gln Gly Cys Glu Pro Ile Leu Ile Lys Tyr Arg His
 95 115 120 125
 96 Ser Trp Pro Glu Ser Leu Ala Cys Glu Glu Leu Pro Val Tyr Asp Arg
 97 130 135 140
 98 Gly Val Cys Ile Ser Pro Glu Ala Ile Val Thr Ala Asp Gly Ala Asp
 99 145 150 155 160
 100 Phe Pro Met Asp Ser Ser Asn Gly Asn Cys Arg Gly Ala Ser Ser Glu
 101 165 170 175
 102 Arg Cys Lys Cys Lys Pro Val Arg Ala Thr Gln Lys Thr Tyr Phe Arg
 103 180 185 190
 104 Asn Asn Tyr Asn Tyr Val Ile Arg Ala Lys Val Lys Glu Ile Lys Thr
 105 195 200 205
 106 Lys Cys His Asp Val Thr Ala Val Val Glu Val Lys Glu Ile Leu Lys

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Input Set : A:\NIH133.1CPC1.TXT
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107	210	215	220	
108	Ala Ser Leu Val Asn Ile Pro Arg Glu Thr Val Asn Leu Tyr Thr Ser			
109	225	230	235	240
110	Ser Gly Cys Leu Cys Pro Pro Leu Asn Val Asn Glu Glu Tyr Leu Ile			
111	245	250	255	
112	Met Gly Tyr Glu Asp Glu Glu Arg Ser Arg Leu Leu Leu Val Glu Gly			
113	260	265	270	
114	Ser Ile Ala Glu Lys Trp Lys Asp Arg Leu Gly Lys Lys Val Lys Arg			
115	275	280	285	
116	Trp Asp Met Lys Leu Arg His Leu Gly Leu Asn Thr Ser Asp Ser Ser			
117	290	295	300	
118	His Ser Asp Ser Thr Gln Ser Gln Lys Pro Gly Arg Asn Ser Asn Ser			
119	305	310	315	320
120	Arg Gln Ala Arg Asn			
121		325		
124	<210> SEQ ID NO: 3			
125	<211> LENGTH: 1484			
126	<212> TYPE: DNA			
127	<213> ORGANISM: Homo sapiens			
129	<400> SEQUENCE: 3			
130	cggggcctgg gcggsagggg cggtggtgg agctcggtaa agctcggtgg accccattgg 60			
131	gggaatttga tccaaggaag cggtgattgc cgggggagga gaagctccca gatccttgc 120			
132	tccacttgcgc gccccggagg cggagacgcg gagcgggcct tttggcgtcc actgcgcggc 180			
133	tgcacccctgc cccatcctgc cgggatcatg gtctgcggca gcccgggagg gatgctgctg 240			
134	ctggggccgc ggctgcttgc cctggctgc ctctgcctgc tccgggtgcc cggggctcgg 300			
135	gctgcagcct gtgagccctg cccgcattttt ctgtgcaagt ccctgcctg gaacatgact 360			
136	aagatgccca accacctgca ccacagcact caggccaaacg ccatacctggc catcgagcag 420			
137	ttcgaaggtc tgctggcac ccactgcgc cccgatctgc tcttcttct ctgtgccatg 480			
138	tacgcgccca tctgcaccat tgacttccag cacgagccca tcaagccctg taagtctgtg 540			
139	tgcgagcggg cccggcaggg ctgtgagccc atactcatca agtaccgcgc ctcgtggccg 600			
140	gagaacctgg cctgcgagga gctgccatgt tacgacaggg gcgtgtgcattt ctctcccgag 660			
141	gccatcgta ctgcggacgg agctgattttt cctatggattt ctagtaacgg aaactgtaga 720			
142	ggggcaagca gtgaacgctg taaatgtaa cctattagag ctacacagaa gacctatttc 780			
143	cggaaacaatt acaactatgtt cattcggtt aaagttaaag agataaaagac taagtgcatt 840			
144	gatgtgactg cagtagtgaa ggtgaaggag attctaaagt cctctctgtt aaacattcca 900			
145	cgggacactg tcaacctcta taccagctct ggctgcctct gcccctccact taatgttaat 960			
146	gaggaatata tcatcatggg ctatgaagat gaggaacgtt ccagattactt cttggtgqaa 1020			
147	ggctctatag ctgagaagtg gaaggatcgatc ctcggtaaaa aagttaaagcg ctggatatg 1080			
148	aagcttcgtc atcttgactt cagtaaaagt gattcttagca atagtgtttt cactcagagt 1140			
149	cagaagtctg gcaggaactc gaaccccccgg caagcacca actaaatccc gaaatacaaa 1200			
150	aagtaacaca gtggacttcc tattaagact tacttgattt gctggacttag caaaggaaaa 1260			
151	ttgcactattt gcacatcata ttctattgtt tactataaaa atcatgtgtt aactgattat 1320			
152	tactctgtt tctctttgg tttctgtttc tctcttctct caaccccttt gtaatggttt 1380			
153	ggggcagac tcttaagttt attgtgagtt ttctatttca ctaatcatga gaaaaactgt 1440			
154	tcttttgcaaa taataataaaa ttaaacatgc tgtaaaaaaaa aaaa 1484			
156	<210> SEQ ID NO: 4			
157	<211> LENGTH: 325			
158	<212> TYPE: PRT			
159	<213> ORGANISM: Homo sapiens			

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161 <400> SEQUENCE: 4
 162 Met Val Cys Gly Ser Pro Gly Gly Met Leu Leu Leu Arg Ala Gly Leu
 163 1 5 10 15
 164 Leu Ala Leu Ala Ala Leu Cys Leu Leu Arg Val Pro Gly Ala Arg Ala
 165 20 25 30
 166 Ala Ala Cys Glu Pro Val Arg Ile Pro Leu Cys Lys Ser Leu Pro Trp
 167 35 40 45
 168 Asn Met Thr Lys Met Pro Asn His Leu His His Ser Thr Gln Ala Asn
 169 50 55 60
 170 Ala Ile Leu Ala Ile Glu Gln Phe Glu Gly Leu Leu Gly Thr His Cys
 171 65 70 75 80
 172 Ser Pro Asp Leu Leu Phe Phe Leu Cys Ala Met Tyr Ala Pro Ile Cys
 173 85 90 95
 174 Thr Ile Asp Phe Gln His Glu Pro Ile Lys Pro Cys Lys Ser Val Cys
 175 100 105 110
 176 Glu Arg Ala Arg Gln Gly Cys Glu Pro Ile Leu Ile Lys Tyr Arg His
 177 115 120 125
 178 Ser Trp Pro Glu Asn Leu Ala Cys Glu Glu Leu Pro Val Tyr Asp Arg
 179 130 135 140
 180 Gly Val Cys Ile Ser Pro Glu Ala Ile Val Thr Ala Asp Gly Ala Asp
 181 145 150 155 160
 182 Phe Pro Met Asp Ser Ser Asn Gly Asn Cys Arg Gly Ala Ser Ser Glu
 183 165 170 175
 184 Arg Cys Lys Cys Lys Pro Ile Arg Ala Thr Gln Lys Thr Tyr Phe Arg
 185 180 185 190
 186 Asn Asn Tyr Asn Tyr Val Ile Arg Ala Lys Val Lys Glu Ile Lys Thr
 187 195 200 205
 188 Lys Cys His Asp Val Thr Ala Val Val Glu Val Lys Glu Ile Leu Lys
 189 210 215 220
 190 Ser Ser Leu Val Asn Ile Pro Arg Asp Thr Val Asn Leu Tyr Thr Ser
 191 225 230 235 240
 192 Ser Gly Cys Leu Cys Pro Pro Leu Asn Val Asn Glu Glu Tyr Ile Ile
 193 245 250 255
 194 Met Gly Tyr Glu Asp Glu Glu Arg Ser Arg Leu Leu Leu Val Glu Gly
 195 260 265 270
 196 Ser Ile Ala Glu Lys Trp Lys Asp Arg Leu Gly Lys Lys Val Lys Arg
 197 275 280 285
 198 Trp Asp Met Lys Leu Arg His Leu Gly Leu Ser Lys Ser Asp Ser Ser
 199 290 295 300
 200 Asn Ser Asp Ser Thr Gln Ser Gln Lys Ser Gly Arg Asn Ser Asn Pro
 201 305 310 315 320
 202 Arg Gln Ala Arg Asn
 203 325
 206 <210> SEQ ID NO: 5
 207 <211> LENGTH: 111
 208 <212> TYPE: PRT
 209 <213> ORGANISM: Rattus norvegicus
 211 <400> SEQUENCE: 5
 212 Cys Gln Pro Ile Ser Ile Pro Leu Cys Thr Asp Ile Ala Tyr Asn Gln

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213 1 5 10 15
214 Thr Ile Met Pro Asn Leu Leu Gly His Thr Asn Gln Glu Asp Ala Gly
215 20 25 30
216 Leu Glu Val His Gln Phe Tyr Pro Leu Val Lys Val Gln Cys Ser Ala
217 35 40 45
218 Glu Leu Lys Phe Phe Leu Cys Ser Met Tyr Ala Pro Val Cys Thr Val
219 50 55 60
220 Leu Glu Gln Ala Leu Pro Pro Cys Arg Ser Leu Cys Glu Arg Ala Gln
221 65 70 75 80
222 Gly Cys Glu Ala Leu Met Asn Lys Phe Gly Phe Gln Trp Pro Asp Thr
223 85 90 95
224 Leu Lys Cys Glu Lys Phe Pro Val His Gly Arg Gly Glu Leu Cys
225 100 105 110
228 <210> SEQ ID NO: 6
229 <211> LENGTH: 111
230 <212> TYPE: PRT
231 <213> ORGANISM: Drosophila melanogaster
233 <400> SEQUENCE: 6
234 Cys Glu Pro Ile Thr Ile Ser Ile Cys Lys Asn Ile Pro Tyr Asn Met
235 1 5 10 15
236 Thr Ile Met Pro Asn Leu Ile Gly His Thr Lys Gln Glu Ala Gly
237 20 25 30
238 Leu Glu Val His Gln Phe Ala Pro Leu Val Lys Ile Gly Cys Ser Asp
239 35 40 45
240 Asp Leu Gln Leu Phe Leu Cys Ser Leu Tyr Val Pro Val Cys Thr Ile
241 50 55 60
242 Leu Glu Arg Pro Ile Pro Pro Cys Arg Ser Leu Cys Glu Ser Ala Arg
243 65 70 75 80
244 Val Cys Glu Lys Leu Met Lys Thr Tyr Asn Phe Asn Trp Pro Glu Asn
245 85 90 95
246 Leu Glu Cys Ser Lys Phe Pro Val His Gly Gly Glu Asp Leu Cys
247 100 105 110
250 <210> SEQ ID NO: 7
251 <211> LENGTH: 319
252 <212> TYPE: PRT
253 <213> ORGANISM: Xenopus laevis
255 <400> SEQUENCE: 7
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257 1 5 10 15
258 Gly Leu Val Leu Leu Leu Pro Asn Ala Tyr Cys Ala Ser Cys Glu
259 20 25 30
260 Pro Val Arg Ile Pro Met Cys Lys Ser Met Pro Trp Asn Met Thr Lys
261 35 40 45
262 Met Pro Asn His Leu His His Ser Thr Gln Ala Asn Ala Ile Leu Ala
263 50 55 60
264 Ile Glu Gln Phe Glu Gly Leu Leu Thr Thr Glu Cys Ser Gln Asp Leu
265 65 70 75 80
266 Leu Phe Phe Leu Cys Ala Met Tyr Ala Pro Ile Cys Thr Ile Asp Phe
267 85 90 95

RAW SEQUENCE LISTING ERROR SUMMARY DATE: 01/04/2005
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Please Note:

Use of n and/or Xaa have been detected in the Sequence Listing. Please review the Sequence Listing to ensure that a corresponding explanation is presented in the <220> to <223> fields of each sequence which presents at least one n or Xaa.

Seq#:10; N Pos. 21
Seq#:11; N Pos. 10,16
Seq#:12; Xaa Pos. 13

VERIFICATION SUMMARY

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L:372 M:281 W: Numeric Fields not Ordered, <221> Sort in ascending order!
L:376 M:258 W: Mandatory Feature missing, <220> Tag not found for SEQ ID#:10
L:377 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:10 after pos.:0
L:387 M:281 W: Numeric Fields not Ordered, <221> Sort in ascending order!
L:391 M:258 W: Mandatory Feature missing, <220> Tag not found for SEQ ID#:11
L:392 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:11 after pos.:0
L:402 M:281 W: Numeric Fields not Ordered, <221> Sort in ascending order!
L:406 M:258 W: Mandatory Feature missing, <220> Tag not found for SEQ ID#:12
L:407 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:12 after pos.:0